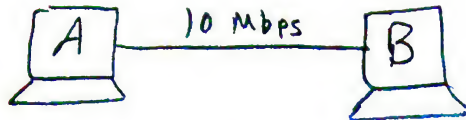
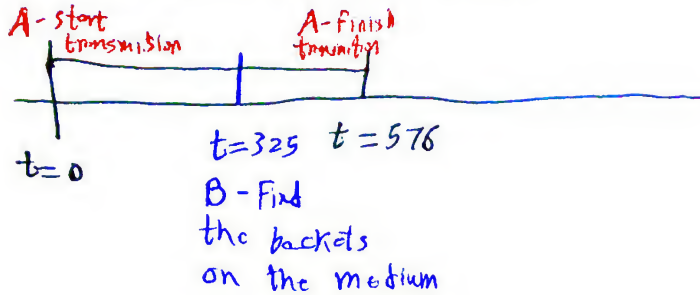


P18



$$d_{\text{prop}} = 325 \text{ bit times}$$



→ B begins transmitting before A finishes  
 ↳  $t = 0 : 325$  (before sense A)

① Assume B starts at  $t=0$   
 - A will sense B's frame at  $t=325$

② Assume B starts at  $t=324$   
 - A will sense B's frame at  $t = 324 + 325 = 649$

\* In general

A can sense B's frame before finishing, IF B start transmission at  $t$

where  $t < 576 - 325$   
 $t < 251$

P19

$$d_{\text{prop}} = 245 \text{ bit times}$$

Assume that waiting time  
 $= K \cdot 512 \text{ bit times}$

→ B will schedule its retransmission  
 after  $K_B \cdot 512 = 512 \text{ bit times}$

$$t = 245 + 512 = 757 \text{ bit times}$$

→ A will start retransmission after  $K_A \cdot 512 = 0$

$$t = 245 \text{ bit times}$$

→ A will reach B at

$$t = 245 + 245 = 490$$

→ B sense that A is using the medium so there will be no collision

→ B will wait only if A's frame does not finish at  $t = 757$

$$\text{Frame Length} > 557 - 245$$

P 23

total aggregate throughput

$$= \leq \text{bandwidth}$$

$$= (9 + 2) * 100 \text{ Mbps}$$

$$= 1100 \text{ Mbps}$$

P 29 For ~~R3~~ R4

in Label	out Label	dest	out int.
20	10	A	0
	12	D	0
21	8	A	1

R6

in	out	dest	intr.
	20	A	0

R5

in	out	dest	intr.
	21	A	0